
# Planning for An Uncertain Future – Notes form Regional Workshops in the Tulare Lake, San Joaquin River, and Sacramento River Regions

## Workshop Objectives

The Water Plan scheduled a series of half day workshops to help the Water Plan identify what regions are doing to prepare for an uncertain future. The Water Plan team provided an overview of an analytical framework to evaluate the performance of regional resource management strategies under alternative future scenarios. Workshops were scheduled to coincide with the regional forum meetings as follows: The Tulare Lake regional forum on Tuesday, January 17, the San Joaquin River on January 18, and the Sacramento River on January 20. Participants in the workshops helped inform how regional strategies are to be characterized in Update 2013 by:

- Providing advice on the policy considerations relevant to evaluating regional resource management strategies in light of many future risks and uncertainties
- Identifying key regional assumptions to guide the Update 2013 technical analysis to plan for an uncertain future
- Describing success for each region in terms of meeting future water management objectives.

## Glossary

**Performance measure** - Quantitative measures used to evaluate the performance and compare resource management strategies.

**Resource management strategy** - A project, program, or policy that helps federal, State or local agencies manage water and related resources. Resource management strategies in the Water Plan are grouped by their intended outcomes: reduce water demand, improve operational efficiency and transfers, increase water supply, improve water quality, practice resource stewardship; and improve flood management. Although most of the resource management strategies have multiple potential benefits, any individual site-specific project or program within a resource management strategy may contribute only one, or a few of the benefits.

**Response package** – Combinations of different resource management strategies to be implemented to achieve regional water management objectives.

**Scenario** - Descriptions of alternative plausible future conditions outside the control of the policy-makers.

**Tulare Region Workshop**

General comments and questions on the Water Evaluation and Planning Model (WEAP) and the scope of the analysis.

- Why is this analysis just looking at the Hydrologic Regions in the Central Valley?
- Does the WEAP model use a single vertical layer to represent groundwater?
- Why does the analysis restrict groundwater elevation from dropping below the historical low?
- How does the groundwater analysis consider heterogeneous groundwater conditions?
- Are the WEAP stream nodes where the stream inflow and outflow calculations occur?
- How was the model calibrated?
- How are you using information on water management costs?
- How are you addressing a Delta failure scenario?

Comments on Performance Measures

- Need to consider food security and water quality, and the economic impacts of losing agricultural lands.
- The Water Plan should consider food production concerns. Conversion of agriculture to other uses, demand hardening, other impacts from water use efficiency measures, and conversion of crops from field crops to higher value crops.
- Will the analysis look at future water availability / sustainable water supplies for agriculture?
- Do you consider how urbanization of agricultural lands will affect the overall economic growth of an area?

Comments on Resource Management Strategies

- Agriculture has already maxed out water use efficiency measures.
- The Water Plan should consider the water quality impacts associated with land use.
- The Water Plan should consider the water quality to water quantity relationships like matching water quality to water use.
- Consider agricultural water re-use.
- How are you addressing groundwater quality impacts and management responses including leaking underground fuel tanks?
- How is agricultural water use efficiency calculated?

Comments on Land Use Scenarios

- How are you assuming residential land use will change in the future? What is the increased water demand?
- You can expect higher densities in the next 15 years: 110 foot lots with 1300-1800 square feet homes. More multiple family and bungalow style houses, and attached houses.
- How will the Water Plan consider the impacts of land retirement and habitat restoration on agricultural production.
- Bureau of Land Management is looking at how retired lands can be used for habitat.
- The Forest Service out of the Vallejo office is applying vegetation management models.

**San Joaquin Workshop**

General comments and questions on the Water Evaluation and Planning Model (WEAP) and the scope of the analysis.

- Are the stream flows in WEAP static? Should look at the SWRCB flow criteria.
- Does WEAP simulate groundwater subsidence?
- What climate change scenarios are you considering? Are they wetter or drier than the historical record?
- How does WEAP handle water rights?
- Are the regions consistent with the Merced groundwater basin?
- Looking at the San Joaquin Regional Report from Update 2009, the current trend population growth seems too high.

Comments on Performance Measures

- Using a 50% agricultural supply reliability as a threshold seems too low.
- What do you do if you have an area or sector with consistent shortages? Environmental conditions can be sensitive to long term shortages. Timing of flows can be important.
- Need to consider the relationship between surface water and groundwater conditions.
- How are you capturing current system problems regardless of future projections?
- Need to show the linkage between instream flow requirements and other in basin uses.
- You should describe how climate change will affect cropping patterns.
- Some areas are experiencing increased soil salinity.
- Should consider how climate change could impact where people live. People may move from valley into foothills to get away from heat.
- What will the impacts of higher water use in the Delta be on other areas?
- Are you including water-energy linkages in your analysis?
- Need to say something about water temperature requirements even if it is only narrative.
- Need to evaluate groundwater overdraft.
- Consider energy use of water management strategies.
- Describe how climate change will affect the actual supply coming into the system and decisions about future water management strategies.

Comments on Resource Management Strategies

- Check with the SWRCB regarding what is replacing the VAMP flows. Should consider new VAMP requirements or natural flow regimes.
- You should consider system re-operation and conjunctive water management.
- Consider outdoor urban water use efficiency.
- Consider integrated flood management and use of small scale storage to capture local flood flows and how to include land use buffers and habitat/managed wetlands to capture flood flows.
- Consider how small scale agricultural runoff can be treated and put to other uses.
- Consider new environmental water requirements like the San Joaquin River Restoration.
- Should consider how management of upper watersheds affects downstream water quality. For example mercury in Alpine lakes.
- Should consider adaptive management approaches to avoid the risk of making wrong decisions.
- Water quality is an important missing piece in what was presented today.

- Climate change may affect future strategies like the Madera groundwater bank. Should consider conjunctive management for wet scenarios and water use efficiency and recycling for dry scenarios.

Comments on Land Use Scenarios

- Look at how the San Joaquin Blueprint captures future growth.
- General plans are trending towards more dense development.
- Agriculture is trending towards orchards replacing truck crops.
- Farms on the west side of Merced are starting to use land use buffers and habitat.
- On the eastside some agriculture is moving to previously unirrigated lands.
- Land use scenarios should consider energy and green house gas reduction goals.
- Land use scenarios should consider the effect of disbursed energy production sources (like solar) on land use and water use.
- Should consider how the central valley flood plans will affect future land use?
- Future growth will occur on smaller lots and higher density housing.
- The land use scenarios need to balance growth with maintaining agriculture.
- Need to consider effects of converting agricultural lands to habitat.
- Should consider city spheres of influence for information about future growth.

**Sacramento Regional Forum**

General comments and questions on the Water Evaluation and Planning Model (WEAP) and the scope of the analysis.

- How do you set priorities for agricultural and urban water uses?

Comments on Performance Measures

- Under performance measures you show 47% agricultural supply reliability. Is this meant to be O.K.? How do you select the thresholds?
- It is important to capture the distinctions between regions. For example the Sacramento River Hydrologic Region is a source area for the San Joaquin River Hydrologic Region. Need to analyze each region separately.
- Do you analyze the differences in water use efficiency between the Sacramento River and San Joaquin River valleys?
- How do you look at limits of available surface water and groundwater uses?

Comments on Resource Management Strategies

- Consider how FERC reservoir relicensing will affect water management.
- You should consider how energy proposals will affect water management such as hydraulic fracking.
- There should be more emphasis on forest management in the analysis.

Comments on Land Use Scenarios

- I am concerned that you are asking questions that are best left to local land use decision makers.